

**INVITATION TO BID**

**Sealed bid proposals addressed to the City of Gaithersburg,  
800 Rabbitt Road, Gaithersburg, Maryland 20878 for:**

**ONE (1) 2005 CAB AND CHASSIS WITH KNUCKLE  
BOOM TRASH LOADER**

**BID# 2004-23**

**Will be received at 800 Rabbitt Road (Gaithersburg Public  
Service Building), Gaithersburg, Maryland until:**

**Tuesday, July 13, 2005**

**At**

**10:00 am (EST)**

**and will be opened at that time.**



**SPECIFICATIONS ARE ENCLOSED**

## INFORMATION FOR BIDDERS

### 1. GENERAL CONDITIONS – SEALED BIDS

Instruction forms and specifications may be obtained at Public Works, Parks Maintenance and Engineering, 800 Rabbitt Road, Gaithersburg, Maryland 20878, or by calling 301-258-6370. All bids are to be submitted on forms or in accordance with instructions issued by the City of Gaithersburg. All bids are to be submitted in sealed envelopes, either in person or by mail. Date of the bid and what it applies to should be noted on the outside of the envelope. Bids which show any omission, irregularity, alteration of forms, additions not called for, conditional or unconditional, unresponsive bids or bids obviously unbalanced may be rejected. The City reserves the right to waive formalities or technicalities in bids as the interests of the City may require.

### 2. SPECIFICATIONS

Specifications provide a general guide as to quality, design and equipment necessary for the vehicle to perform specific functions. Bidders must submit complete descriptive literature and specifications with the bid. The City may waive minor differences in specifications provided these differences do not effect the functions of the item being purchased.

### 3. PRICE

Unit price shall be on the basis of delivery to locations as indicated in the specifications. Price shall not include Federal Excise or State Sales Taxes since the City is exempt from such levies.

### 4. DELIVERY

State maximum time required to complete delivery of all vehicles.

### 5. METHOD OF PAYMENT

Payment shall be made by the City upon delivery, receipt of Certificate of Origin and acceptance of individual vehicle contracted for and submission by the Contractor of a suitable invoice.

#### 6. WARRANTY

All vehicles shall be covered by Manufacturer's standard warranty. Any additional warranties should be clearly stated. All new vehicles must meet Federal requirements.

#### 7. PRE-DELIVERY SERVICING

Servicing prior to delivery shall include focusing lights, proper adjustments of generator and electrical system, filling and charging of batteries, proper alignment of front wheels, filling of tires to proper air pressure, complete lubrication of chassis, engine and all running gear, filling the cooling system with water and permanent-type anti-freeze, plus other servicing normally provided by dealers before delivery of new vehicles.

#### 8. MANUALS

The contractor shall furnish two (2) operator's handbooks for each vehicle, one service/parts manual, and if available, one (1) videotape (VHS ½ inch tape) of operation and adjustments.

#### 9. ADVERTISING

The vehicle(s) furnished shall contain no advertising other than the manufacturer's names and/or model designation nor shall the Dealer's name be placed on the vehicle.

#### 10. TRADE - IN

The vehicle(s) for trade-in may be inspected as noted under this Item 10 at the City's maintenance yard, by contacting the Public Services Director. Telephone (301-258-6370). The City reserves the right to retain any vehicles offered in trade. In this event, the bidders credit allowance for trade-in will be added to the purchase price of the new vehicle. The vehicle offered for trade will be on an AS IS basis, except that the City reserves the right to remove any special equipment such as two-way radios, emergency beacon lights and snow plowing accessories. The name of the City shall not be used in any advertising for the resale or disposal of any vehicle accepted as a trade-in.

#### 11ACCEPTANCE OR REJECTION OF BIDS

The City reserves the right to accept or reject any bid when the public interest shall be served thereby.

## 7. BIDDER ASSISTANCE

Any assistance rendered to the City by a bidder in the preparation of City specifications shall not provide any basis for favored treatment to such bidder in the award of this contract.

## 8. ADDITIONAL INFORMATION

In cases of disputes as to whether or not an item or service quoted or delivered meets specifications, the decision of the City shall be final and binding on both parties. Additional information or clarification of any of the instructions contained relative to the bid or specifications may be obtained from the Public Services Director. Telephone (301-258-6370).

## **CONDITIONS**

1. There is to be no dealer identification attached to the new vehicles.

Each vehicle is to be serviced for operation and delivered with a certificate of origin and warranty as issued by the manufacturer. At time of delivery from dealer, each vehicle shall contain a minimum of five (5) gallons of gasoline.

2. Certification: the successful bidder or bidders will be required, upon delivery of each vehicle, to submit a certification showing that the vehicle was serviced in accordance with the manufacturer's recommended new motor vehicle preparation check sheet. This certification is to be signed by the person who serviced the vehicle, as well as the owner and/or a designated member of management.
3. All units are to be furnished complete with standard equipment and accessories, as listed in the manufacturer's printed literature. Vehicles are to conform to the latest federal and Maryland State requirements at the time of delivery.
4. This bid contains sixteen (16) pages. Every page is a part of the bid package, and must be submitted as part of the bid.

## City of Gaithersburg

### ONE (1) 2005 CAB AND CHASSIS WITH KNUCKLE BOOM TRASH LOADER

The intent of this specification is to cover the basic requirements of the vehicle to be purchased by the City of Gaithersburg.

#### 2005 CAB AND CHASSIS

<b>TYPE:</b>	Two Wheel Drive	_____
<b>GVWR:</b>	35,000 lbs. minimum	_____
<b>CAB TO AXLE:</b>	102 "C.A.	_____
<b>WINDOWS:</b>	Tinted Glass	_____
<b>AIR CONDITIONING:</b>	Yes	_____
<b>ENGINE:</b>	Diesel( 230 hp / 660 ft. lbs. Torque Wet Sleeve Type)	_____
<b>TRANSMISSION:</b>	Allison Automatic 5 Speed MD 3560	_____
<b>COOLING:</b>	Premium Heavy Duty Radiator And Cooling Hoses	_____
<b>FRAME:</b>	Full Channel Steel Frame (2,500,000 RBM Minimum)	_____
<b>AXLES &amp; SPRINGS:</b>	12,000 lb. Front Axle With Wheel Seals 12,000 lb. Parabolic Front Springs	_____

	23,000 lb. Rear Axle Ratio Geared To Yield A Maximum Road Speed of 60-65 mph. 23,500 lb. Rear Main Springs_____
<b>TIRES:</b>	All Weather, On –Off Road Steel Belted Radials
<b>BRAKES:</b>	Dual Air Brake System Automatic Slack Adjusters Front and Rear _____
<b>SEATING:</b>	Air Ride Driver Seat – High Back Vinyl Air Ride Passenger Seat – High Back Vinyl _____
<b>FUEL TANK:</b>	50 Gallon Minimum Side Mounted Steel Tank _____
<b>STEERING:</b>	Power Steering _____
<b>MIRRORS:</b>	Heated Mirrors _____
<b>COLOR:</b>	Doe Skin Tan _____
<b>ELECTRICAL:</b>	12 Volt Starting and Electrical System 160 Amp Alternator Batteries Maintenance Free 2100 CCA _____
<b>WIPERS:</b>	Electric Windshield Wipers, Intermittent Wipers _____
<b>BACK-UP ALARM:</b>	Yes _____
<b>RADIO:</b>	AM/FM _____
 <b>CAB:</b>	 Conventional Cab Combination Arm Rest/Grab Handle, Each Door Floor Mats- Full Heavy Duty Rubber

Heavy Duty Vinyl Floor

Painted Front Grill

Safety Beacon on Roof (Whelen R5DX amber,  
permanent mount, or equivalent)

Cab Instrument:

a) Speedometer

b) Odometer

c) Transmission Temp.

d) Voltmeter

e) Oil Pressure

f) Coolant Temp.

g) Tachometer

h) Air Pressure Gauge

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## **KNUCKLE BOOM TRASH LOADER**

### **INTENT**

It is the intent of these specifications to describe a hydraulically operated knuckle boom trash loader to be used in the collection of oversized trash items such as discarded appliances, furniture, brush, leaves, building material, etc. The loader shall be mounted over the rear axle of a short wheel base cab chassis. This allows the flexibility to either attach a trailer to the vehicle, or use the unit to load other vehicles. These specifications are based upon the Petersen Model RL-3 Lighting Loader (Petersen Industries, 446 U.S. Highway 27 North, Lake Wales, Florida 33853 - (863) 676-1493). Other comparable equipment types providing the same function will be considered. The knuckle boom loader shall be installed on a vehicle that has a minimum Gross Vehicle Weight of 30,000 lbs., a cab-to-axle dimension of 102 inches, and a minimum of 48 inches of frame behind the center of the rear axle. This bid will include the cost of the truck, the cost of the trash loader, the cost to install the trash loader onto the truck, the cost of two trash dump trailers and a trade in allowance on a vehicle and trailer we currently own.

The City currently owns three (3) knuckle boom trash loaders. It is the city's intent that the equipment in this bid be compatible and interchangeable with the City equipment. It will be the bidder's responsibility to inspect the City's equipment to assure compatibility. The bidder MUST notify the City of any problems relative to this issue, and the issue MUST be resolved prior to award of a contract. Bidders can contact Mark Scafide to arrange inspection of the City's equipment at 301-258-6370.

The bidder must list all exceptions to these specifications. Bidder must provide printed product literature proving compliance with specifications.

### **PEDESTAL ASSMBLY**

To be an open A-frame type. Total height not to exceed seven feet from mounting plate top of pedestal/main boom connection point. Loader sub frame/counterweight to be a 2 1/2 inch steel plate reducing stress on truck frame and providing additional safe lifting capacity over the side.

Swing post to be a single piece high strength solid steel (ASTM4140) turning in (ASTM-D4020-81) Nylatron bearings. Welded spindle/head assembly is to be stress relieved prior to installation.

Boom rotation to be accomplished by a direct drive 270-degree hydraulic rotary actuator with a maximum torque rating of 72,000in.lbs. To prevent spindle bending moments from being transmitted to a rotary actuator, the actuator must be mounted by means of a torque arm assembly.

### **BOOM CONSTRUCTION**

Main boom to be comprised of two (2) each, 4" x 8" x 3/8" thick high tensile steel tubes connected to each other only at their center line to allow a shock absorbing flexing action of the boom.

Tip boom to have an extendible/retractable telescopic section controllable from the operator's platform.

The inner and outer sleeves of the telescopic section must be separated by replaceable Nylatron wear blocks on all sides. This is to prevent metal to metal wear. Hydraulic hoses for the telescopic section must be enclosed in steel boxes for protection. No exposed hoses shall be permitted.

**Boom Radius:** From the center of rotation to the center of the bucket shall be 20 feet.

**Lift Capacity :** Rear-3100 lbs. with boom fully extended  
Side-1800 lbs. with boom fully extended

### **BOOM CONNECTION POINTS**

Boom connection points must be equipped with replaceable Nylatron bushings and a two inch bolt with castellated nut to prevent spreading of the connection pivot point.

### **TRASH BUCKET**

To be a special municipal trash bucket actuated by a single double-acting cylinder. The bucket shall be capable of continuous rotation with no need for physical stops. Bucket rotation to be accomplished by a continuous rotation bucket motor, with 5,500-inch lbs. torque rating.

- A 10 gauge smooth steel clamshell scoop for leaves and sand.
- A minimum of five ribs per side to handle branches, logs and appliances.
- A trample ram in the center for compacting trash in body.

The bucket must be four feet long with an opened width of five feet between pickup blades. These blades must be high impact, tempered steel that form a reverse curve in the closed position to help prevent “scalping” and digging of grass lawns. There are to be no hydraulic hoses below bucket rotator.

## **POWER SOURCE**

To be a transmission mounted power take off coupled directly to the hydraulic pump (no drive shafts).

This knuckle boom loader will be installed on a truck with an automatic transmission. The power source shall be a “Hot Shift” PTO. “Hot Shift” automatically disengages the PTO hen the truck is placed in gear, and re-engages when the truck is placed back in neutral (ready for hydraulic operation). This eliminates the possibility of damage to the hydraulic components that could result if the operator drives the vehicle with the PTO in gear. Also provides for smooth engagement of the PTO with no gnashing or grinding of gears.

Must be equipped with over-speed protection. Over-speeding the pump causes the hydraulic fluid to overheat. Over-speed protection prevents damage to the engine, hydraulic system, and major system components resulting from over-speeding the engine.

## **HYDRAULIC COMPONENTS**

<b>Reservoir:</b>	50 gallon baffled tank with suction and return filters and cutoff valves for easy servicing. Includes a sight gauge with a thermometer and a vent filter.
<b>Cylinders:</b>	Double acting with chromed rods and aluminum pistons.
<b>Main Boom:</b>	5” x 32” with a 2 ½ “ shaft.
<b>Tip Boom:</b>	5”x 32” with a 2 ½ “ shaft.
<b>Tip Extension:</b>	2” x 48” with a 1 ¼ “ shaft.
<b>Bucket:</b>	4” x 12” with a 2” shaft.

**Control Valves:** Gresen stack type with port reliefs.

Valve shall work with tandem pump to allow the following functions to be done simultaneously without the loss of power

- 1) Rotate crane and move or extend the outer boom
- 2) Open or close the grapple and rotate the grapple
- 3) Move the inner boom cylinder and move or extend the outer cylinder or extend the outer boom

**Safety Locking**

**Valves:** Installed on boom and outrigger cylinders to prevent a leakdown or collapse in case of a hydraulic hose rupture.

**Pump:** Single commercial Intertech P-20

**Conductors:** Steel tubing and high tensile steel wire braided hoses, 4000 PSI, 16,000 PSI minimum burst.

**Pressure:** Main relief set at 2,400 PSI maximum.

## **ENGINE CONTROL**

Engine is to be programmed for the proper RPM level and activated by a heavy-duty toggle switch at the operators station.

## **OPERATOR CONTROLS**

**Side Mount:** Operator station to be mounted on the side of the pedestal. This option allows the operator to rotate with the boom and does not require a ladder to mount. Control valves to be mounted under the seat with valve handles between the operator's legs for easy access. Includes seat belt and safety railing.

**All Weather Cab:** Side mount enclosed in a special cab. Steel construction with screened windows, a removable plexiglass door and electric heater.

## **OUTRIGGER STABILIZERS**

Outrigger to be constructed with hydraulically powered telescoping rectangular tubing. Outriggers to be equipped with large steel pads to minimize damage to the street. Outriggers must telescope out and down to reach a horizontal distance of 11' 8" between outer edges. Outward stabilizer movement to be powered by two hydraulic cylinders with a bore of 2" and a stroke of 20". The sleeves that accomplish this outward movement must be separated by Nylatron bushings on all four sides to prevent metal-to-metal wear and to allow a greater area for grease.

Downward movement to be powered by two(2) hydraulic cylinders with a bore of three inches and a stroke of 22 inches.

## **BODY AND HEAD BOARD**

Bidder shall provide a head board which protects the cab from being hit by the boom. \_\_\_\_\_

Head board will have holders for three long handled tools. \_\_\_\_\_

A bucket rest shall be provided, behind the cab, for placing the grapple on when storing. \_\_\_\_\_

Steel fenders shall be provided over the rear axles. \_\_\_\_\_

## **MISCELLSNEOUS**

Tail pipe shall be extended past the operator platform

All steel fenders over rear wheels

Rubber mud flaps behind rear wheels

The total height of the vehicle shall be stated on the dashboard of the truck

## **PAINT**

Loader must receive one (1) coat of high-grade primer and two (2) coats of high-grade enamel (manufacturers standard color).

## **TRAILER PACKAGE**

To include the following:

Float control, diverter valve, electric brake controls and quick coupler between truck and trailer. Also includes hydraulic and light couplers.

<b>Outrigger Warning Light:</b>	Dash mounted red light remains lit until the outriggers are fully raised.
<b>Behind The Cab Bucket Rack:</b>	Bucket racks between the cab and the loader, includes all steel cab protector and tool rack.
<b>Boom Up Sensor:</b>	Light in cab warns the driver of excessive boom height .
<b>Dual Top Mounted Strobes (Bar Mounted)</b>	
<b>One Pair Of Outrigger Strobes</b>	

## **FLOAT CONTROL**

Must have a float control to allow the boom/bucket to free –turn with the trailer around street corners.

## **DIVERTER VALVE**

Must have a diverter valve to redirect hydraulic oil from the loader controls to the dump trailer controls. Must have quick couplers for the hydraulic lines.

## **ELECTRICAL**

Must be equipped with a high quality electric brake control and quick coupler between the truck and the trailer (six pole with cap).

## **OTHER**

This bid shall also include the installation of a pintle type towing hitch with a vertical capacity of 6,000 lbs., and a gross trailer weight of 30,000 lbs.

## **WARRANTY**

Three (3) year major structural, one (1) year hydraulic, and standard manufacturer's warranty (if different).

**Provide parts/service manuals for equipment and a training videotape for operators/mechanics at delivery**

## **QUICK COUPLERS**

All hydraulic lines and electrical hook ups shall be equipped with quick couplers compatible with the City vehicle and/or the trash loader.

## **WARRANTY**

Three (3) structural, one (1) year hydraulic component.

## **MANUALS**

Two (2) copies of parts and service manuals.

## **PRE-DELIVERY INSPECTION**

Equipment must be completely serviced and operational upon delivery.

**Note: The price should include delivery to The City of Gaithersburg Public Works Facility, 800 Rabbitt Road Gaithersburg, MD 20878.**

I have inspected The City of Gaithersburg's Knuckle Boom Trash Loaders and trailers. The equipment submitted in this bid is compatible and inter-changeable with The City's equipment. YES NO  
\_\_\_\_\_

Make and Model of Knuckle Boom Loader \_\_\_\_\_

**BID PRICE:** One (1) 2005 Cab and Chassis  
With Knuckle Boom Trash Loader

**TOTAL BID PRICE:** One (1) 2005 Cab and Chassis  
With Knuckle Boom Loader \_\_\_\_\_

Approximate Delivery Time \_\_\_\_\_

Date of Bid \_\_\_\_\_

Bid Submitted By \_\_\_\_\_

Printed Name

Signed Name Date

Company Name

Address

Phone

Bid Authorized by \_\_\_\_\_

Printed Name

Signed Name Date

Title



